

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 2

DATED 11/29/2007

Control	0907-13-004, ETC.
Project	STP 2000(620)TE, ETC.
Highway	VA
County	RUNNELS

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum notification which details the changes and the respective proposal pages which were added and/or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped "This Proposal Issued for Informational Purposes."

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: STP 2000(620)TE

CONTROL: 0907-13-004

COUNTY: RUNNELS

LETTING: 12/05/2007

REFERENCE NO: 1129

PROPOSAL ADDENDUMS

___ PROPOSAL COVER

X BID INSERTS (SH. NO.: 5-7)

X GENERAL NOTES (SH. NO.: A THRU S)

___ SPEC LIST (SH. NO.:)

___ SPECIAL PROVISIONS:

ADDED:

DELETED:

___ SPECIAL SPECIFICATIONS:

ADDED:

DELETED:

X OTHER: SEE BELOW

DESCRIPTION OF ABOVE CHANGES

(INCLUDING PLANS SHEET CHANGES)

BID INSERTS: SHEET 5-7: DELETED BID ITEM 682-2003

ADDED BID ITEM 682-2003 WITH A QUANTITY OF 2 EA

GENERAL NOTES: SHEET A: DELETED PARAGRAPHS 9 AND 10

SHEET K: ITEM 502 - DELETED 3RD PARAGRAPH

SHEET L: ITEM 502 - ADDED NEW PARAGRAPH AT THE END
OF ITEM 502 NOTES

ALL OTHER SHEETS REVISED DUE TO SHIFTING

PLAN SHEETS: SHEETS 4, 4A THRU 4I, AND 5 REVISED DUE TO ABOVE CHANGES.

SHEET 29: IN "SIGNAL HEAD AND POLE PLACEMENT" TABLE
REVISED AS NOTED

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	2001	001	PREPARING ROW DOLLARS and CENTS	AC	.440	1
	104	2017		REMOVING CONC (DRIVEWAYS) DOLLARS and CENTS	SY	280.500	2
	104	2022		REMOVING CONC (CURB AND GUTTER) DOLLARS and CENTS	LF	1,559.100	3
	110	2003		EXCAVATION (SPECIAL) DOLLARS and CENTS	CY	218.500	4
	161	2006	001	COMPOST MANUF TOPSOIL (PB) DOLLARS and CENTS	CY	218.500	5
	170	2001		IRRIGATION SYSTEM DOLLARS and CENTS	LS	1.000	6
	192	2004		PLANT MATERIAL (5-GAL) DOLLARS and CENTS	EA	15.000	7
	192	2016		PLANT BED PREPARATION DOLLARS and CENTS	SY	163.300	8
	192	2024		PLANT MATERIAL (30 GAL) (TREE) DOLLARS and CENTS	EA	8.000	9
	400	2006		CUT & RESTORING PAV DOLLARS and CENTS	SY	346.500	10
	416	2002	001	DRILL SHAFT (24 IN) DOLLARS and CENTS	LF	144.000	11

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	416	2031	001	DRILL SHAFT (TRF SIG POLE) (30 IN) DOLLARS and CENTS	LF	24.000	12
	416	2032	001	DRILL SHAFT (TRF SIG POLE) (36 IN) DOLLARS and CENTS	LF	28.000	13
	420	2001	002	CL A CONC (MISC) DOLLARS and CENTS	CY	152.110	14
	450	2034		RAIL (PEDESTRIAN RAIL)(42 IN) DOLLARS and CENTS	LF	854.600	15
	500	2001	002	MOBILIZATION DOLLARS and CENTS	LS	1.000	16
	502	2001	022	BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	9.000	17
	528	2004	005	LANDSCAPE PAVERS DOLLARS and CENTS	SY	253.040	18
	528	2009	005	LANDSCAPE PAVERS (TY III) DOLLARS and CENTS	SY	21.300	19
	529	2004		CONC CURB & GUTTER (TY II) DOLLARS and CENTS	LF	1,559.100	20
	530	2010		DRIVEWAYS (CONC) DOLLARS and CENTS	SY	170.000	21

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	531	2005		CURB RAMPS (TY 1) DOLLARS and CENTS	EA	1.000	22
	531	2015		CONC SIDEWLKS (4") DOLLARS and CENTS	SY	1,468.200	23
	531	2044		CURB RAMPS (TY 10) DOLLARS and CENTS	EA	2.000	24
	610	2071		INS RDWY ILL ASSEM (SPECIAL) DOLLARS and CENTS	EA	24.000	25
	618	2012		CONDT (PVC) (SCHD 40) (1") DOLLARS and CENTS	LF	1,288.000	26
	618	2018		CONDT (PVC) (SCHD 40) (2") DOLLARS and CENTS	LF	1,827.000	27
	618	2024		CONDT (PVC) (SCHD 40) (4") DOLLARS and CENTS	LF	32.000	28
	618	2035		CONDT (PVC) (SCHD 80) (2") (BORE) DOLLARS and CENTS	LF	157.000	29
	618	2041		CONDT (PVC) (SCHD 80) (4") (BORE) DOLLARS and CENTS	LF	177.000	30
	620	2011	001	ELEC CONDR (NO. 8) BARE DOLLARS and CENTS	LF	2,230.000	31
	620	2012	001	ELEC CONDR (NO. 8) INSULATED DOLLARS and CENTS	LF	5,677.000	32

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	ITEM NO	DESC CODE	S.P. NO.				
	620	2013	001	ELEC CONDR (NO.10) BARE DOLLARS and CENTS	LF	3,245.000	33
	620	2014	001	ELEC CONDR (NO.10) INSULATED DOLLARS and CENTS	LF	7,616.000	34
	624	2007		GROUND BOX TY A (122311) DOLLARS and CENTS	EA	4.000	35
	624	2011		GROUND BOX TY C (162911) DOLLARS and CENTS	EA	4.000	36
	628	2149		ELC SRV TY T 120/240 000 (NS)GS(N)TP(O) DOLLARS and CENTS	EA	1.000	37
	628	2158		REMOVE ELECTRICAL SERVICES DOLLARS and CENTS	EA	1.000	38
	628	2291		ELC SRV TY D 120/240 100 (NS)SS(E)SF(U) DOLLARS and CENTS	EA	1.000	39
	628	2292		ELC SRV TY D 120/240 150 (NS)SS(E)SF(U) DOLLARS and CENTS	EA	1.000	40
	644	2058		RELOCATE SM RD SN SUP & AM TY S80 DOLLARS and CENTS	EA	7.000	41
	666	2048		REFL PAV MRK TY I (W) 24"(SLD)(100MIL) DOLLARS and CENTS	LF	611.000	42
	677	2005		ELIM EXT PAV MRK & MRKS (12") DOLLARS and CENTS	LF	358.000	43

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	ITEM NO	DESC CODE	S.P. NO.				
	677	2007		ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS	LF	85.000	44
	680	2002		INSTALL HWY TRF SIG (ISOLATED) DOLLARS and CENTS	EA	1.000	45
	682	2001		BACK PLATE (12 IN) (3 SEC) DOLLARS and CENTS	EA	8.000	46
	682	2002		BACK PLATE (12 IN) (4 SEC) DOLLARS and CENTS	EA	2.000	47
	682	2014		PED SIG SEC (12 IN) LED (2 INDICATIONS) DOLLARS and CENTS	EA	8.000	48
	682	2022		VEH SIG SEC (12 IN) LED (GRN ARW) DOLLARS and CENTS	EA	4.000	49
	682	2023		VEH SIG SEC (12 IN) LED (GRN) DOLLARS and CENTS	EA	8.000	50
	682	2025		VEH SIG SEC (12 IN) LED (YEL) DOLLARS and CENTS	EA	10.000	51
	682	2027		VEH SIG SEC (12 IN) LED (RED) DOLLARS and CENTS	EA	10.000	52
	684	2010		TRF SIG CBL (TY A) (12 AWG) (5 CONDR) DOLLARS and CENTS	LF	300.000	53
	684	2011		TRF SIG CBL (TY A) (12 AWG) (6 CONDR) DOLLARS and CENTS	LF	80.000	54

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	684	2012		TRF SIG CBL (TY A) (12 AWG) (7 CONDR) DOLLARS and CENTS	LF	116.000	55
	684	2021		TRF SIG CBL (TY A) (12 AWG) (16 CONDR) DOLLARS and CENTS	LF	498.000	56
	686	2027		INS TRF SIG PL AM(S) 1 ARM (28') DOLLARS and CENTS	EA	2.000	57
	686	2037		INS TRF SIG PL AM(S) 1 ARM (36') LUM DOLLARS and CENTS	EA	2.000	58
	688	2001		PED DETECT (2 INCH PUSH BTN) DOLLARS and CENTS	EA	8.000	59
	1013	2001		TRASH RECEPTACLES DOLLARS and CENTS	EA	8.000	60
	1014	2022		LANDSCAPE AMENITY (BENCH) DOLLARS and CENTS	EA	9.000	61
	1014	2023		LANDSCAPE AMENITY (TREE GRATE) DOLLARS and CENTS	EA	23.000	62
	5049	2002		BIODGRD EROSION CONTROL LOGS (18" DIA) DOLLARS and CENTS	LF	15.000	63
	6007	2001		REMOVING TRAFFIC SIGNALS DOLLARS and CENTS	EA	1.000	64

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	6266	2001		VIVDS PROCESSOR SYSTEM DOLLARS and CENTS	EA	1.000	65
	6266	2002		VIVDS CAMERA ASSEMBLY DOLLARS and CENTS	EA	4.000	66
	6266	2003		VIVDS SET-UP SYSTEM DOLLARS and CENTS	EA	1.000	67
	6266	2005		VIVDS COMMUNICATION CABLE (COAXIAL) DOLLARS and CENTS	LF	541.000	68
	6950	2001		ELECTRIC RECEPTABLE DOLLARS and CENTS	EA	23.000	69

GENERAL NOTES

The following Standard Sheets have been modified: NONE.

Signs, markings, delineators and signals conform to details shown on the plans, the TMUTCD, the Compliant Work Zone Traffic Control Device List (CWZTCDL), the Department's Standard Sheets, "Standard Highway Sign Designs for Texas" and "Sign Crew Field Book." These publications are available from the Department's Traffic Operations Division.

All items described in the plans that have not been identified in the proposal as separate bid items or otherwise identified for payment are subsidiary. The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured or paid directly, but will be subsidiary to pertinent Items.

Provide payrolls in a timely manner for Contractor and Subcontractor employees working on this project. If payrolls are not provided, the monthly Contractor payments will be withheld until payrolls are received. Any payment that was withheld will not be paid until the following month.

In those instances where fixed features require, vary the governing slopes indicated in these plans from within the limits to the extent determined.

If Contractor elects to establish a pit within 200 feet of a public road, construct a barrier or other device in accordance with Natural Resources Code, Chapter 133, and Section 133.041.

Do not use salt water with solids in excess of 10,000 parts per million, as determined by evaporation.

Locate and adjust manholes, utility valves and other utility covers to the proposed grade.

Provide one laptop microcomputer and software, in accordance with DMS-10101, "Computer Equipment" with the exception of "Additional Software."

Locate the project bulletin board at an approved location within the project limits and make accessible to the public at all times. Do not remove the bulletin board from the project until approved.

Existing street trees within the project area will be removed by others before construction.

Construct all ramps, sidewalks, steps, curb ramps, handrails, pedestrian push buttons, and other pedestrian elements in accordance with Texas Accessibility Standards (TAS) issued by the Texas Department of Licensing and Regulation. Provide three copies of

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TAS at the pre-construction meeting. Maintain one copy of TAS at the project site at all times.

Item 5, “Control of the Work”

Submit shop drawings electronically for the fabrication of structural items and other items specifically listed in the plans to SJT_ShopPlanReview@dot.state.tx.us. For instructions on submitting shop drawings electronically see “Guide to Electronic Shop Drawing Submittal” at <http://www.txdot.gov/publications/bridge.htm>.

Responsibility for construction surveying will conform to Article 5.6.C, “Method C.”

There may be utilities within the right of way. Not all utilities have been shown in the plans. Any utility locations shown in the plans should be considered to be approximate. Verify the locations of any utilities shown in the plans, and locate utilities not shown in the plans.

In addition to complying with the Texas One-Call Law (Utilities Code Title 5, Chapter 251), make suitable advance notification to affected municipalities regarding Class B underground facilities and call the Department’s San Angelo District Traffic Office at telephone number (325) 947-9281 to have the Department’s existing traffic signal and illumination utilities located.

Request and coordinate any necessary de-energizing of existing overhead electric lines.

The following is a tabulation of various utilities that may be encountered:

EXISTING UTILITIES

Utility Type	Utility Owner	Address	Contact Person	Telephone Number
Water and Sanitary Sewer	City of Winters	310 S. Main Street Winters, Texas 79567	Jack Davis Jr.	325-754-4424
Electric	AEP Texas	933 W. 19 th Street San Angelo, Texas 76903	Fred Hernandez Mike Nikolauk	325-657-2748 325-657-2800
Telephone	Verizon			800-483-4000
Cable Television	Allegiance Communications		Jesse Martinez	325-365-1595
Natural Gas	Atmos Energy	earla.ahrens@ atmosenergy.com	Earla Ahrens	325-481-3705

Item 7, “Legal Relations and Responsibilities”

Do not use non-certified persons to perform electrical work. See Item 7.15 “Electrical Requirements” and special provision to item 7 for additional details.

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Item 8, "Prosecution and Progress"

The number of working days allowed to complete this project and interim milestones, if any, was calculated using a conceptual time determination schedule. The Engineer will supply bidders upon written request, one electronic copy of the time determination schedule. The electronic copy will be compatible with SureTrak software. The time determination schedule is provided for informational use only and is not intended for bidding or construction purposes. The time determination schedule assumes generic resources, production rates and sequences of construction. The time determination schedule also assumes average weather conditions that may be based on historic data for the project location. The work is scheduled in accordance with the traffic control plan and sequence of work included in the proposal.

Working day charges start on February 19, 2008.

Item 9, "Measurement and Payment"

Provide a conversion rate for units of payment for work subcontracted to disadvantaged business enterprises if units of payments differ from those shown on the plans.

The progress payment period will end two working days before the last working day of the month. Deliver invoices to be paid as material on hand on or before the end of the progress payment period.

Item 100, "Preparing Right of Way"

The limits of this item are from face of buildings to three feet beyond lip of curb, throughout the area shown in the plans as the project limits.

Item 110, "Excavation"

Removal of earth, roadway base, or other materials necessary to install items shown on landscape plan and details for tree planting areas to a depth of four feet will be measured and paid for as "EXCAVATION (SPECIAL)".

Item 161, "Compost"

Install compost manufactured topsoil (CMT) at all tree well locations at four-foot depth to fill excavations as shown in the plans.

Item 170, "Irrigation System"

A. General

At pre-construction conference, furnish manufacturer's literature of all materials with identification including product name, telephone number and mailing address of product source and manufacturer, if different from source, content of product, amount of each

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ingredient in the product, and manufacturer's directions regarding use and application of the product, if applicable.

Complete automatic irrigation system and make fully operational prior to plant material installations.

"Free flow" the irrigation source, verify and check volume and pressure to worst case station in design for confirmation of source capability to design. Static pressure of 52 to 60 PSI is anticipated. If source does not meet anticipated design parameters, notify and consult with Engineer to resolve this condition through redesign of the irrigation system or improvement of source condition. In the event this notification is not performed, assume full responsibility for any revisions necessary. Revised drawings may be generated by the Engineer in consultation with the Contractor to resolve either condition. No additional compensation will be allowed in the case of irrigation system redesign as this work will be considered included in payment for this item.

The drawings are generally diagrammatic and indicative of the work to be installed. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings and sleeves which may be required. Carefully investigate the site conditions affecting all work and plan work accordingly, furnishing such offsets, fittings and sleeves as may be required to meet site conditions. The use of piping in common trenches is encouraged whenever possible. Do not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions or differences should be brought to the attention of the Engineer who will review recommended changes proposed by the Contractor. The Engineer will approve or disapprove proposed changes and in the latter situation the Engineer reserves the right to direct changes to his satisfaction. It is expected that some rerouting will be necessary around trees, utilities, etc. This work will be considered included in payment for this item. In the event this notification is not performed, assume full responsibility for any revisions necessary.

Note the required installation taps and new two inch water meter on existing lines to local municipal water supply. Coordinate, pay all fees, construct, and furnish all water meters, appurtenances, etc. to provide complete working irrigation systems.

City of Winters will supply water as a material only. Coordinate openings of accounts for City of Winters for water and with electrical provider for electricity.

B. Materials

Controllers, valves, heads, sprays and bubblers will be manufactured from the same company or as directed.

1. Remote Control Valves

All station remote control valves will have a brass or stainless steel flow control stem for flow regulation. All remote control valves will be 2 inch size. Remote

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control valves will be GFN construction: Rainbird "PEB series", Hunter "ICV series" or approved equal. Master valve will be brass construction: Rainbird "GB series" or Hunter "HBV brass series" in 2-inch size.

2. Valve Boxes

All valves will be mounted below grade in meter boxes by East Jordan Iron Works (800) 289-4766 or approved equal. Manufacturer's extensions or stacking of boxes to comply with grades and details are required. One valve per box only will be permitted.

Water meter box, faucet box and valve control box, by East Jordan Iron Works or approved equals:

Meter box, MSBCF 1118-18-XL (18" depth) with MSP cast iron cover (lid) MSCBC-1118 or approved equal.

Double check valve box, MSBCF 1527-18 (18" depth) with MSP cast iron cover (lid) MSCBC-1527 or approved equal.

Valve boxes used for wire splice locations will be MSP 15x24 with 108-P drop in meter lid.

Faucet boxes and valve control boxes, 34P24 (24" depth) with MSP cast iron cover (lid) or approved equal.

3. Irrigation Heads

Bubblers will be "Rainbird #1408 series", "Hunter PCN" or approved (pressure compensating) equal fixed rate bubblers with two gallons per minute flow rate, on threaded riser/extensions.

Equip all bubblers with shrub adapters and standard filters. Install according to detail.

Provide twenty four (24) additional replacements of each type of head, threaded riser/extensions, 'L' fittings use below spray bodies/riser extensions, bubbler, spray body, and nozzles specified to the Engineer for future maintenance and replacement purposes. These replacement materials will be provided in a neat, organized, labeled, compartmentalized plastic tool box or similar self contained storage unit subject to approval with each part assigned its own storage space separate from other parts. Plastic or paper bags will not be acceptable.

4. Miscellaneous Fittings

Furnish all other fittings and appurtenances necessary to complete the system and as detailed.

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Enclose in grey PVC electrical conduit for all underground routing as follows:

number of conductors	minimum conduit size
up to 7	½"
8 to 11	1"
12 and more	2"

6. Solvent Cement

Solvent cement will be the type recommended by the pipe manufacturer.

7. Controller

Controller will be "Rainbird ESP-LX" series, "Hunter ICC series", eight station, metal boxed outdoor type, or approved equal. Install in accordance with the manufacturer's specifications. Locate outdoors as directed. Enclose all external wiring not buried in minimum one inch galvanized steel conduit in compliance with Item 618.

8. Double Check Valve Assembly

Protect potable water supply with 2-inch double check valve assembly, Febco 805 equipped with stainless steel handles or approved equal (DCVA) in size of mainline pipe.

9. Pipe Encasement

All pipe sleeves will be schedule 80 PVC. Comply with item 618 requirements for PVC Schedule 80 (eight inch size sleeves to accommodate system pipe required and/or as shown on plan). Encase irrigation pipe under any concrete paved surfaces used by vehicles, driveways, curbs, curb and gutter, or structures such as walls, etc.

10. Pipe

Install pipe not labeled on plan in compliance with 4 FPS velocity rule except that no pipe will be smaller than one inch. Pipe will be minimum one inch to all ells and/or swing-joints at head and riser locations. Swing joints such as "Hardie SJ", "Rainbird TSJ", or approved equal (flex pipe not acceptable) required when heads are located at edge of hardscape such as sidewalk, curb, curb and gutter, streets, etc.

C. Construction Methods

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1. General

Provide a minimum of 12 inches of cover for irrigation lines or 36 inches of cover where lines cross under roadway surfaces except where necessary to cross over or under storm sewer pipe or other utilities as necessary and returning to 36 inch depth within two feet of said objects. However under no circumstances is any conduit or pipe to be located in the cross section of the street pavement construct whether asphalt or concrete (locate under these items).

Provide material free of sharp rock, stones greater than ½-inch diameter, or other materials that could damage pipe during the backfilling operation. Install sand as a cushion two inches above and below the pipe except in bed/grass areas.

2. Nozzles

Install in accordance with the details in the drawings. Install on the risers only after the system has been thoroughly flushed to remove all soil and waste that may have accumulated in the lines during installation. Do not install until flushing of lines is observed by the Engineer during inspection process. Coordinate timing of flush test with Engineer.

3. Valves

Install valves in accordance with the details in the drawings and in approved valve boxes which will reach to at least four inches below the bottom of the valve. Install remote control section valves at a depth of 12 inches.

4. Controllers

Install controller in accordance with the drawings, the details and Item 618. Dedicate one electrical circuit to each controller. See Electrical Standard Sheets.

5. Double Check Valves

Install double check valves in accordance with the drawings and details.

6. Water Meter

Contact the governing authority for installation of water meter. A two inch water meter is required.

7. Electrical Work

In addition to the codes and notes specified, accomplish work in compliance with applicable ED series standard sheets.

Install 120 volt service (including switches, meters, breakers, plugs and all other appurtenances) by a licensed electrical contractor in accordance with applicable codes.

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Use existing service pole or install new service pole as indicated on plan. Contact utility for service meter installation.

D. Guarantee and Acceptance

1. Guarantee

Guarantee the irrigation system materials and labor for ninety days from the date of acceptance for plant maintenance period. Provide in writing on company letterhead and signed by the chief executive officer. Irrigation systems will be inspected concurrently with, and subject to the ninety day maintenance period to Item 192. During the ninety day maintenance period, perform the following maintenance activities as a minimum and to the satisfaction of the Engineer:

- a. Install, maintain, and adjust the controller program or any other part of the irrigation systems to insure the proper distribution and delivery of water to the plant material.
- b. Inspect, repair and/or replace any equipment that is found to be defective or has been damaged for any reason.
- c. Make any adjustments that may become necessary to insure the proper delivery of water to the plant material.

2. Operating and Maintenance Data

Provide controller manual and instructions covering full operation, care and maintenance of the equipment. Instruct Engineer and City of Winters representative in the proper operation of the controller and system.

Item 192, "Landscape Planting"

Planting soil will be compost manufactured topsoil (CMT). Place CMT in beds, under tree grates, and grass areas in one-foot lifts and "water in" with at least two inches of water standing over the CMT prior to placing the next lift in order to obtain effective settlement of CMT.

Install tree staking and materials for tree staking consisting of three eight-foot long metal T-posts spaced equidistant, at five feet or at hardscape edge from the trunk of each tree. Install number 12 wire and nylon-webbed hose to brace and stay trees to stakes. If tree grates are used, tie to tree grates at four corners of tree grates as directed.

At planting, all trees and plants will receive an application of "Healthy Start" 21 gram, 12-8-8 analysis, fertilizer tablets by Plant Health Care, Inc., telephone number 800-421-9051 or 940-483-1766, or approved equal. Submit manufacturer's literature and data for approval. The tablets will be placed per manufacturer's recommendations or as directed, at up to but not exceeding 1.5 times the rate specified by the manufacturer,

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with a minimum of six tablets per tree and one tablet per four inch or one gallon container plant.

Plant material (30 gallon) will be *Quercus macrocarpa* (Bur Oak), *Quercus muhlenbergii* (Chinkapin Oak) and/or other species of tree as directed. Container will be minimum 30 gallon. Height will be minimum nine feet. Caliper will be minimum two inches. Spread will be minimum three feet. Trees will be of specimen quality, single leader trunk and nursery container grown stock. No branches will begin less than five feet above the top of the root ball.

Install 36-inch deep root control barrier at all tree wells prior to planting soil mix installation. Install per manufacturer's specifications or as directed. Root control barrier will not be visible at the soil surface. Material will be NDS Shawtown EP series root barrier panels or approved equal.

The method for planting trees will be as follows: Complete all concrete work and tree grate work prior to planting. Backfill bed area under the tree grates as tree planting occurs. Place tree grate and stake location of trunk of proposed tree. Backfill CMT and water-in as previously noted up to the point where the tree can be placed at the required grade at the stake location. Prior to backfilling around tree and filling in bed area under grate and around the tree; the tree grates will be reinstalled to confirm that the trunk is at the center of the tree grate tree opening. Backfilling will not be permitted until the trunk location is confirmed at the tree grate opening with both items (tree and grate) in place. After this confirmation finish backfilling and watering in CMT to the required grade. Grade CMT to facilitate flood irrigation and so that the highest point of the CMT and top of tree root ball is not closer than six inches to the top of the tree grate at any location.

The typical four foot by sixteen foot area around each tree constitutes bed area (note that this area will vary in size at one location). Bed preparation includes and is not limited to CMT manipulation to ensure even flood irrigation over area, vegetation barrier/root control barrier, aeration system pipe, etc.

Install aeration system pipe as shown on plan or as directed. Aeration system pipe is a four inch diameter perforated plastic corrugated or smooth plastic pipe. Perforations circumnavigate (go all the way around) the pipe diameter. Holes on one side of pipe are not acceptable. If smooth pipe is used it will be SCH 40 complying with Item 170 specifications. If corrugated pipe is used it will be manufactured by ADS or Hancor, Inc., or approved equal. Perforate pipe to the degree needed to facilitate air and water transfer with the surrounding soil without clogging. Wrap pipe with filter fabric to prevent sedimentation and install perforated caps or grates at surface to prevent clogging. Place surface mulch in tree and bed areas. Install surface mulch at a depth of two inches when placed dry over tree planter and bed areas and bed areas under tree grates. All mulch for surface application will be approved non-floating shredded cypress mulch.

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Item 400, "Excavation and Backfill for Structures"

The asphalt concrete for patches adjacent to new curb and gutter shall be two inches thick and shall conform to the requirements of the following:

- a. Item 334, "Hot-Mix Cold-Laid Asphalt Concrete Pavement," Type D,
- b. Item 340, "Dense-Graded Hot-Mix Asphalt (Method)," Type D,
- c. Item 341, "Dense-Graded Hot-Mix Asphalt (QC/QA)," Type D, or
- d. Other material as approved.

The flexible base for patches adjacent to new curb and gutter shall be ten inches thick and shall conform to the requirements of Item 247, Type A, Grade 1 or other material as approved. The prime coat for flexible base shall be MC-30 or other material as approved, and applied at a rate of 0.20 gallons per square yard.

Item 420, "Concrete Structures"

Class A concrete will be used for payment on all tree planter curbs, landscape paver curbs, and walls used to support handrails. All other concrete will be paid for by the pertinent bid items.

Item 421, "Hydraulic Cement Concrete"

Provide all items listed in 421.3.C, "Testing Equipment" with the exception of strength-testing equipment.

Volumetric mixers may not supply classes of concrete identified as structural concrete in Table 5, unless otherwise directed.

Item 450, "Railing"

Railings will include the following: steel posts for rails, wrought iron rails, steel pipe handrails, various metal trim pieces, fasteners, anchors, supplementary devices for rails and railings, and all other appurtenances necessary to accomplish the work. There are no locations where galvanized finish is required on the components covered under this definition. Paint all exposed metal members listed in the definition above for railings. Prime coat will be applied to all components placed on the project. A gloss finish metal paint will be applied after the primer coat has been approved. Provide color samples from the manufacturer for both the primer and the finish coats prior to assembling the railing. All painting will be performed according to the manufacturer's specifications. Color will be black, as approved.

Full bead weld covering the entire circumference of the abutment will be required.

Submit shop drawings for railings.

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Item 502, "Barricades, Signs and Traffic Handling"

Contractor may commence work on either side of Main Street. The work zone may be north and/or south of Dale Street. Contractor will not begin work on the remaining side of Main Street until the first work area is substantially complete, as approved. An exception to this requirement is made for traffic signal work, which may be performed on all four corners of the intersection simultaneously.

Contractor may close the parking lane on one side of Main Street at a time. Minimize the duration of such closures. Do not close parking lane overnight, on non-working days, or at times when work is not actively underway unless otherwise approved.

No lane closures are allowed.

Meet with and coordinate construction activities with property owners within the project area and provide suitable access during construction to each property as agreed between Contractor and owner and as approved by Engineer. Maintain ingress and egress for established businesses at all times during construction unless otherwise directed. Minimize all disruptions to business access. Provide seven calendar days notice to each property owner before any construction in the vicinity of the property.

Provide temporary ramps to building entrances, as directed. Construct these ramps of 1/2" plywood on suitable base.

As directed, furnish and install signs "PEDESTRIAN CROSSWALK" (R9-8), "SIDEWALK CLOSED" (R9-9), "SIDEWALK CLOSED USE OTHER SIDE" R9-10, "SIDEWALK CLOSED AHEAD CROSS HERE" R9-11, "SIDEWALK CLOSED CROSS HERE" (R9-11a). Mount these signs on barricades or sign supports as directed. Place other additional appropriate warning or protective devices as directed for pedestrian safety.

Furnish and install anti-skid steel road plates suitable for pedestrian and vehicular traffic to cross trenches as needed for access to adjacent property and where directed.

Install orange plastic construction fencing around the perimeter of trenches and excavations to remain open at night, around other work areas where pedestrians should be excluded, around uncured concrete, and at other locations shown on the plans or as directed. Construction fence will be orange plastic, highly visible, four feet high, and as approved. Construction fence supports will be steel t-posts with safety caps, wooden posts having minimum dimension of 1 1/2 inches, or plastic drums. Embed steel or wooden posts sufficiently as directed. Steel or wooden supports will extend to top of construction fence. Attach construction fence to supports sufficiently as directed. Do not exceed eight feet between supports. Do not use steel reinforcing bars as supports for construction fence.

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Provide flaggers at such times and locations as directed to ensure the safe passage of traffic through construction areas. When flaggers are used to control traffic, use "FLAGGER AHEAD" (FCW20-7a) signs and "BE PREPARED TO STOP" (CW20-7b) signs. Flaggers will use 24" STOP/SLOW paddles. Provide flaggers at intersecting city streets within flagger control work area, or if approved, close intersecting city streets using Type III barricades and signs "ROAD CLOSED" (R11-2).

Shadow vehicles shown on the plans are not required.

Traffic control devices denoted with the triangle symbol on the plans may be omitted.

Channelizing devices will be plastic drums.

Remove existing roadside signs from existing supports and relocate onto long term work zone sign supports as directed.

Item 504, "Field Office and Laboratory"

Furnish one Type C structure. The structure will be located within the project limits unless otherwise approved.

Locate the project bulletin board at the field office and make accessible to the public at all times. Do not remove the bulletin board from the project until approved.

Provide telephone, land-line wired telephone service, telephone answering machine, scanner, fax unit, copier, and internet service provider (ISP). Provide a networking printer capable of printing on tabloid paper (11" x 17"). Provide ink or toner cartridges. Provide the necessary cables to connect to a computer provided by the Engineer.

Enclose the parking area with a 6-ft. chain-link fence, a top-mounted 3-strand barbed wire, and a 12-ft. gate with combination lock.

Item 528, "Colored Textured Concrete and Landscape Pavers"

Color of landscape pavers will be "Buff-Austin/San Antonio" by Pavestone, or equivalent.

Domed pavers at street corners and in curb ramps will be "Charcoal" by Pavestone, or equivalent.

Landscape pavers (TY III) will be 2 3/8-inch thick "Hollandstone" domed pavers by Pavestone, or approved equal. Construct landscape pavers (TY III) in accordance with section A-A on standard sheet PED-05, sheet 2 of 4.

Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter"

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Before final acceptance of the project, remove discoloration caused by tire marks, mud, asphalt, paint or other similar material to achieve a uniform color and texture of the finished surface exposed to view.

Reinforcing steel is required.

Measurement will be made along face of curb.

Item 531, "Sidewalks"

Furnish and install 1/2-inch thick joint filler board conforming to DMS-6310, "Joint Sealants and Fillers" between concrete sidewalk and adjacent existing concrete, and where directed.

Place control/score joints as directed usually between 3X3 or 5X5 foot squares in pattern.

Acceptable joint sealing compounds are listed on the Department's "Pre-qualified Joint Sealers" Material/Producer List.

Detectable warning materials will be concrete or brick pavers listed on the Department's "Qualified Detectable Warning Material" list. Engineer will select color of detectable warning materials from manufacturer's standard colors. Provide color samples.

Notes for the removal of existing pavement, curb or sidewalk and construction of new pavement, curb or sidewalk adjacent to historic buildings and historic masonry retaining walls:

1. To minimize potential damage to historic structures, contractor to saw cut existing sidewalk 8 to 12 inches away from the structure.
2. Contractor to construct new sidewalk next to the saw cut edge with installation of expansion joint in between. If existing sidewalk is to be removed entirely, the remaining 8 to 12 inches next to the historic structure will be removed by hand. Expansion joint to be placed between historic structure and new sidewalk.
3. Contractor is responsible for preventing damage to historic structure during the entire construction project, especially during removal of existing pavement, curb, or sidewalk. During the saw cut and hand removal process, contractor to ensure protection of historic structure foundation, materials, elevations, and entryways with decorative flooring.
4. Contractor to repair or replace in kind, at his own expense, any historic materials damaged in the course of executing the work. Contractor is responsible for locating replacement source for historic materials damaged in the course of the work. TxDOT-Environmental Affairs Division to be informed of proposed repairs to facilitate consultation with Texas Historical Commission.

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Item 610, "Roadway Illumination Assemblies"

Ornamental street light poles will be:

Lumec DMS60-175MH-SCB3M-240-R90D-18-BA-FH-GFI-3/4X27-121/2-DEC-BKTX-LMS49914A. Domus DMS60 SCB3M luminaire, 175 watt metal halide, IES Type III cutoff (asymmetrical), 240 volts, 16 flute steel tapered shaft welded to a 6 5/8" base with a cast aluminum base cover, 18-foot pole taper to 4" tenon, banner arm, mechanically assembled to the pole, cast aluminum flag holder for one inch O.D. tubing, mechanically assembled on a U-channel and to the pole, 15A, 120volt, GFI duplex receptacle, weatherproof aluminum cover, 3/4" x 24" x 3" anchor bolts on 12 1/2" bolt circle, black textured finish and all ornamental street light pole accessories, including the duplex receptacle, banner arms, and flag holders are considered as included in payment for this item. Black textured finish is required on all parts, items, and accessories except for the lamp.

or: Dynamic Lighting Inc. DC510 fixture/luminaire equipped on pole as Lumec aforementioned with all ornamental street light pole accessories, including the duplex receptacle, banner arms, and flag holders which are considered as included in payment for this item. or: approved equals.

Note that banner arms, and flag holders which are considered as included in payment for this item are to be installed on only 4 in place poles/luminaires of the 24 sets needed. The other 20 sets of banner arms and flag holders and attachment hardware are to be provided to the City of Winters for maintenance purposes.

Submit shop drawings and manufacturer's literature for ornamental street lights, poles, appurtenances, accessories, and incidentals (subject to TxDOT approval or disapproval).

Item 618, "Conduit"

Make underground conduit bends of 45 degrees or more in PVC conduit systems (including bends into ground boxes) with rigid metal conduit. Where the rigid metal conduit is exposed at any point and where rigid metal conduit extends into ground boxes, bond the rigid metal conduit to the grounding conductor with grounding type bushings or other approved UL-listed grounding connectors. Rigid metallic conduit elbows one inch diameter and larger that are required to be installed in the PVC conduit system will not be paid for separately, but will be considered as included in payment for this Item.

Secure permission from the proper authority before cutting into or removing any walks or curbs.

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The locations of conductor, conduit and ground boxes shown on the plans are diagrammatic only and may be adjusted to accommodate field conditions.

Install conduit under existing pavement by an approved boring method unless otherwise directed. Do not construct boring pits within two feet of the edge of the pavement unless otherwise directed. Do not use water jetting.

When conduits are bored, the vertical and horizontal tolerances will not exceed 18 inches as measured from the intended target point. When boring is used for conduit installations under pavement, the maximum allowable over-cut will be one inch in diameter.

Do not use a pneumatically driven device for punching holes beneath the pavement, commonly known as a "missile."

Install a pull rope in conduit runs in excess of 60 feet.

Furnish and install duct seal at the ends of conduit.

Optionally substitute HDPE conduit meeting the requirements of Item 622, "Duct Cable" for bores requiring PVC Schedule 40 and Schedule 80 conduit when approved. HDPE will be the same size as the PVC conduit shown on the plans. HDPE will be terminated with UL-listed fittings. HDPE may be threaded and used with threaded PVC connectors or couplings. HDPE will be extended through the bore in one continuous piece and will be coupled to RMC elbows or to PVC conduit at the bore pits before entering ground boxes (if ground boxes are required by the plans). HDPE will not contain conductors during installation in this manner. No additional compensation will be paid when HDPE is substituted for this purpose.

Install a continuous bare or green insulated copper wire number 8 AWG or larger in every conduit throughout the electrical system in accordance with the electrical detail sheets and the NEC.

Item 620, "Electrical Conductors"

Use pre-qualified breakaway connectors for both T-base and Shoe Base installations per standard sheet RID(LUM2)-07, notes 2 and 3.

Grounding conductors that share the same conduit, junction box, ground box or structure will be bonded together at every accessible point in accordance with the NEC.

Item 628, "Electrical Services"

Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location shown, when required, will be paid for under force account work. Gain approval of the costs associated with these charges before engaging the utility company to do the work.

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Item 656, “Foundations for Traffic Control Devices”

Form and strike level the top two inches of pedestal pole foundations.

Protect open foundation holes left unattended with traffic control devices and cover suitably, as directed.

Item 666, “Reflectorized Pavement Markings”

Apply glass traffic beads at a rate of 12 pounds per 100 square feet of Type I marking materials.

Item 680, “Installation of Highway Traffic Signals”

Signal and sign mounts will be manufactured by Pelco Products, or approved equal.

Changes in locations of controllers, signal poles, conduit, ground boxes, or other items shown on the plans may be made in those instances deemed necessary or when otherwise approved.

Cover new signal heads with an approved opaque material until placed in operation.

Rigidly mount mast-arm-mounted signal heads in the horizontal position unless otherwise indicated. Mast arm signal head mounts will be of the same manufacture.

Due to roadway crown and variations therein, investigate the relative elevation of each mast pole location and furnish pole lengths that provide proper vertical clearance from the roadway surface to the signal heads.

Controller cabinets will be base-mounted.

Provide certified IMSA Level I traffic technician on the job or on-call 24 hours per day to provide traffic signal maintenance after installation of the traffic signals, during the specified test periods. Furnish the name, address and telephone number of the person responsible for traffic signal maintenance. Respond to reported calls within one hour. If law enforcement personnel are required to provide traffic control due to traffic signal malfunction, costs for such traffic control beyond the first hour will be withheld from Contractor's monthly payment estimate. Make appropriate repairs within 24 hours. Furnish and install a logbook in the controller cabinet and will keep a record of each trouble call reported. Notify the Engineer of each trouble call. The error log in the conflict monitor will not be cleared during the test period without approval.

Demonstrate that the field wiring is properly installed and then install the controller assembly on the completed foundation. Connect the field wiring to the controller assembly, set up, and turn on the controller. After it has been determined that the field wiring (including any detectors) is satisfactory, the specified test period will begin.

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Install a continuous bare or green insulated copper wire number 8 AWG or larger in every conduit (with the exception of isolated loop induction cables) throughout the electrical system in accordance with this Item, the electrical detail sheets, and the NEC.

Bond together grounding conductors that share the same conduit, junction box, ground box or structure at every accessible point in accordance with the NEC.

Item 682, "Vehicle and Pedestrian Signal Heads"

Signal heads, lenses and visors will be manufactured of polycarbonate. Signal heads will be black or other color as approved. Faces will be equipped with tunnel visors. Mounting brackets and pipes will not be manufactured of polycarbonate.

Furnish back plates on traffic signal heads.

Signal heads mounted on poles and mast arm will be level and plumb.

Enclose electrical wiring and traffic signal cable in an approved traffic signal device.

Item 684, "Traffic Signal Cables"

Wiring not addressed on the plans will be in accordance with the NEC.

Terminate the multi-conductor signal cable shown on the plans on the terminal strip in the hand hole. Conductors to the signal heads from the pole will be multi-conductor-sized for the respective head (i.e. four conductors for three section heads). Do not splice the conductors at the hand hole.

Identify each cable as shown on the plans with permanent marking labels using a double-tie strap label at each ground box, pole base and controller.

Item 686, "Traffic Signal Pole Assemblies (Steel)"

Provide one empty raceway in the foundation of each terminal illumination assembly.

Fabricate roadway illumination assemblies conforming to approved shop drawings. Submit shop drawings for approval or use pre-approved standard shop drawings.

To be eligible to use pre-approved standard shop drawings, the shop drawing must be submitted and approved by the Department prior to use on the project. Deviation from the pre-approved standard shop drawing will require resubmission of the shop drawings. The Engineer may approve, in writing, the use of updated standard drawings in cases where the standard drawings have been updated and the updated version has been approved by the Department.

For pre-approval and updates to previously approved standard shop drawings, furnish seven sets of drawings of the complete assembly in accordance with item 441, "Steel Structures" to the Traffic Operations Division.

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Copies of the standard shop drawings are on file with Traffic Operations Division, Bridge Division, and the Materials Section of Construction Division. Additional shop drawings for roadway illumination assemblies built conforming to these drawings are not required. Pre-approved shop drawing manufacturers and assembly model numbers can be found at <http://www.dot.state.tx.us/business/materialproducerlist.htm>, under category "Roadway Illumination and Electrical Supplies."

Provide round poles for mast arm assemblies.

Set anchor bolts for signal poles so that two are in tension and two are in compression.

Traffic signal pole heights and mast arm lengths are shown on the plans for bidding purposes only. Before fabrication, make field measurements to determine the actual pole height necessary to ensure a vertical clearance between 17'-6" and 19'-0" from the roadway surface to the bottom of the lowest point on the signal head assembly or mast arm, and to determine the mast arm lengths required to mount the traffic signal heads over the travel lanes. The mast arm will be straight and level in the span area where the signal heads are attached. These field measurements and elevations will be determined from the actual field locations of the pole foundations, considering above- and below-ground utilities and the existing roadway elevations and widths.

Item 1013, "Trash Receptacles"

Trash receptacles will be those furnished from DuMor Site Furnishings, Receptacle #157, 32-gallon all-steel receptacle, or approved equal. Color will be black. Provide one 32-gallon plastic liner and one hundred 32-gallon plastic trash bags per trash receptacle. Install trash receptacles per manufacturer's specifications at locations as directed, locations shown on plan are for informational purposes only.

Item 1014, "Landscape Amenity"

Landscape Amenity (Bench) will be those furnished from DuMor Site Furnishings, Bench #58, or approved equal. Benches will be six feet long, and have two supports. Color will be black. Install benches per manufacturer's specifications at locations as directed, locations shown on plan are for informational purposes only.

Landscape Amenity (Tree Grate) will have two light holes with caps. Twenty-three cast iron tree grate systems are required. Color will be natural rust iron finish. Install tree grates per manufacturer's specifications at locations shown on plans or as directed by the Engineer. Twenty-two tree grates will be East Jordan Ironworks #8694 Tree Grate Assembly, or approved equal, consisting of two each four foot by four foot grates, four each two foot by four foot grates and one frame that creates a sixteen foot by four foot tree grate system at twenty-two of the twenty-three tree locations. The twenty-third tree location will have a twelve foot by four foot tree grate system that will be East Jordan

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Ironworks #8694 Tree Grate Assembly, or approved equal, consisting of two each four foot by four foot grates, two each two foot by four foot grates and one frame that creates a twelve foot by four foot tree grate system. Install and anchor tree grate frame in compliance with manufacturer's specifications or as directed.

Submit shop drawings for tree grates.

Item 5010, "Transportable Cellular Telephones"

Provide two transportable cellular telephones for the duration of the project.

Item 6007, "Removing Traffic Signals"

Remove existing traffic signal controller and deliver to the Department's San Angelo District Traffic Signal Shop located at 4502 Knickerbocker Road in San Angelo.

Item 6950, "Electric Receptacle"

Furnish and install one weatherproof, commercial-grade ground-fault circuit interrupt (GFCI) duplex 20-amp electric receptacle in single gang device box at each tree grate in each planting bed, as shown on the plans, and as directed.